

PAGE 1 SEQUENCE LISTING  
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## CHM-003.ST25

Phe Arg Ile His Val Glu Asn Gln Thr Arg Ala Arg Asp Asp Val Ser  
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Arg Lys Gln Leu Arg Leu Tyr Gln Leu Tyr Ser Arg Thr Ser Gly Lys  
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His Ile Gln Val Leu Gly Arg Arg Ile Ser Ala Arg Gly Glu Asp Gly  
 65 70 75 80

Asp Lys Tyr Ala Gln Leu Leu Val Glu Thr Asp Thr Phe Gly Ser Gln  
 85 90 95

Val Arg Ile Lys Gly Lys Glu Thr Glu Phe Tyr Leu Cys Met Asn Arg  
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Lys Gly Lys Leu Val Gly Lys Pro Asp Gly Thr Ser Lys Glu Cys Val  
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Phe Ile Glu Lys Val Leu Glu Asn Asn Tyr Thr Ala Leu Met Ser Ala  
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Lys Tyr Ser Gly Trp Tyr Val Gly Phe Thr Lys Lys Gly Arg Pro Arg  
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Lys Gly Pro Lys Thr Arg Glu Asn Gln Gln Asp Val His Phe Met Lys  
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<212> DNA

<213> Human

<400> 3

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## CHM-003.ST25

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&lt;211&gt; 208

&lt;212&gt; PRT

&lt;213&gt; Human

&lt;400&gt; 4

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Asp Phe Arg Ile His Val Glu Asn Gln Thr Arg Ala Arg Asp Asp Val  
 35 40 45

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Ser Arg Lys Gln Leu Arg Leu Tyr Gln Leu Tyr Ser Arg Thr Ser Gly  
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Lys His Ile Gln Val Leu Gly Arg Arg Ile Ser Ala Arg Gly Glu Asp  
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Gly Asp Lys Tyr Ala Gln Leu Leu Val Glu Thr Asp Thr Phe Gly Ser  
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Gln Val Arg Ile Lys Gly Lys Glu Thr Glu Phe Tyr Leu Cys Met Asn  
 100 105 110

Arg Lys Gly Lys Leu Val Gly Lys Pro Asp Gly Thr Ser Lys Glu Cys  
 115 120 125

Val Phe Ile Glu Lys Val Leu Glu Asn Asn Tyr Thr Ala Leu Met Ser  
 130 135 140

Ala Lys Tyr Ser Gly Trp Tyr Val Gly Phe Thr Lys Lys Gly Arg Pro  
 145 150 155 160

Arg Lys Gly Pro Lys Thr Arg Glu Asn Gln Gln Asp Val His Phe Met  
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Lys Arg Tyr Pro Lys Gly Gln Pro Glu Leu Gln Lys Pro Phe Lys Tyr  
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Thr Thr Val Thr Lys Arg Ser Arg Arg Ile Arg Pro Thr His Pro Ala  
 195 200 205

<210> 5

<211> 2716

<212> DNA

<213> House Mouse

<400> 5

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 <213> House Mouse

<400> 6

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Lys Arg Arg His Pro Lys Lys Leu Thr Pro Leu Ala Tyr Lys Gln Phe  
 35 40 45

Ile Pro Asn Val Ala Glu Lys Thr Leu Gly Ala Ser Gly Arg Tyr Glu  
 50 55 60

Gly Lys Ile Thr Arg Asn Ser Glu Arg Phe Lys Glu Leu Thr Pro Asn  
 65 70 75 80

Tyr Asn Pro Asp Ile Ile Phe Lys Asp Glu Glu Asn Thr Gly Ala Asp  
 85 90 95

Arg Leu Met Thr Gln Arg Cys Lys Asp Lys Leu Asn Ala Leu Ala Ile  
 100 105 110

Ser Val Met Asn Gln Trp Pro Gly Val Lys Leu Arg Val Thr Glu Gly  
 115 120 125

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Trp Asp Glu Asp Gly His His Ser Glu Glu Ser Leu His Tyr Glu Gly  
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Arg Ala Val Asp Ile Thr Thr Ser Asp Arg Asp Arg Ser Lys Tyr Gly  
145 150 155 160

Met Leu Ala Arg Leu Ala Val Glu Ala Gly Phe Asp Trp Val Tyr Tyr  
165 170 175

Glu Ser Lys Ala His Ile His Cys Ser Val Lys Ala Glu Asn Ser Val  
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Ala Ala Lys Ser Gly Gly Cys Phe Pro Gly Ser Ala Thr Val His Leu  
195 200 205

Glu Gln Gly Gly Thr Lys Leu Val Lys Asp Leu Arg Pro Gly Asp Arg  
210 215 220

Val Leu Ala Ala Asp Asp Gln Gly Arg Leu Leu Tyr Ser Asp Phe Leu  
225 230 235 240

Thr Phe Leu Asp Arg Asp Glu Gly Ala Lys Lys Val Phe Tyr Val Ile  
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Glu Thr Leu Glu Pro Arg Glu Arg Leu Leu Thr Ala Ala His Leu  
260 265 270

Leu Phe Val Ala Pro His Asn Asp Ser Gly Pro Thr Pro Gly Pro Ser  
275 280 285

Ala Leu Phe Ala Ser Arg Val Arg Pro Gly Gln Arg Val Tyr Val Val  
290 295 300

Ala Glu Arg Gly Gly Asp Arg Arg Leu Leu Pro Ala Ala Val His Ser  
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Val Thr Leu Arg Glu Glu Glu Ala Gly Ala Tyr Ala Pro Leu Thr Ala  
325 330 335

His Gly Thr Ile Leu Ile Asn Arg Val Leu Ala Ser Cys Tyr Ala Val  
340 345 350

Ile Glu Glu His Ser Trp Ala His Arg Ala Phe Ala Pro Phe Arg Leu

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355

360

365

Ala His Ala Leu Leu Ala Ala Leu Ala Pro Ala Arg Thr Asp Gly Gly  
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Gly Gly Gly Ser Ile Pro Ala Ala Gln Ser Ala Thr Glu Ala Arg Gly  
 385 390 395 400

Ala Glu Pro Thr Ala Gly Ile His Trp Tyr Ser Gln Leu Leu Tyr His  
 405 410 415

Ile Gly Thr Trp Leu Leu Asp Ser Glu Thr Met His Pro Leu Gly Met  
 420 425 430

Ala Val Lys Ser Ser  
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&lt;211&gt; 3565

&lt;212&gt; DNA

&lt;213&gt; House Mouse

&lt;400&gt; 7

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 <213> House Mouse

<400> 8

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 35 40 45

Lys Gly Asn Pro Glu Glu Asp Val Asp Thr Ser Gln Val Leu Tyr  
 50 55 60

Glu Trp Glu Gln Gly Phe Ser Gln Ser Phe Thr Gln Glu Gln Val Ala  
 65 70 75 80

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Asp Ile Asp Gly Gln Tyr Ala Met Thr Arg Ala Gln Arg Val Arg Ala  
85 90 95

Ala Met Phe Pro Glu Thr Leu Asp Glu Gly Met Gln Ile Pro Ser Thr  
100 105 110

Gln Phe Asp Ala Ala His Pro Thr Asn Val Gln Arg Leu Ala Glu Pro  
115 120 125

Ser Gln Met Leu Lys His Ala Val Val Asn Leu Ile Asn Tyr Gln Asp  
130 135 140

Asp Ala Glu Leu Ala Thr Arg Ala Ile Pro Glu Leu Thr Lys Leu Leu  
145 150 155 160

Asn Asp Glu Asp Gln Val Val Val Asn Lys Ala Ala Val Met Val His  
165 170 175

Gln Leu Ser Lys Lys Glu Ala Ser Arg His Ala Ile Met Arg Ser Pro  
180 185 190

Gln Met Val Ser Ala Ile Val Arg Thr Met Gln Asn Thr Asn Asp Val  
195 200 205

Glu Thr Ala Arg Cys Thr Ala Gly Thr Leu His Asn Leu Ser His His  
210 215 220

Arg Glu Gly Leu Leu Ala Ile Phe Lys Ser Gly Gly Ile Pro Ala Leu  
225 230 235 240

Val Lys Met Leu Gly Ser Pro Val Asp Ser Val Leu Phe Tyr Ala Ile  
245 250 255

Thr Thr Leu His Asn Leu Leu Leu His Gln Glu Gly Ala Lys Met Ala  
260 265 270

Val Arg Leu Ala Gly Gly Leu Gln Lys Met Val Ala Leu Leu Asn Lys  
275 280 285

Thr Asn Val Lys Phe Leu Ala Ile Thr Thr Asp Cys Leu Gln Ile Leu  
290 295 300

Ala Tyr Gly Asn Gln Glu Ser Lys Leu Ile Ile Leu Ala Ser Gly Gly  
305 310 315 320

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Pro Gln Ala Leu Val Asn Ile Met Arg Thr Tyr Thr Tyr Glu Lys Leu  
325 330 335

Leu Trp Thr Thr Ser Arg Val Leu Lys Val Leu Ser Val Cys Ser Ser  
340 345 350

Asn Lys Pro Ala Ile Val Glu Ala Gly Gly Met Gln Ala Leu Gly Leu  
355 360 365

His Leu Thr Asp Pro Ser Gln Arg Leu Val Gln Asn Cys Leu Trp Thr  
370 375 380

Leu Arg Asn Leu Ser Asp Ala Ala Thr Lys Gln Glu Gly Met Glu Gly  
385 390 395 400

Leu Leu Gly Thr Leu Val Gln Leu Leu Gly Ser Asp Asp Ile Asn Val  
405 410 415

Val Thr Cys Ala Ala Gly Ile Leu Ser Asn Leu Thr Cys Asn Asn Tyr  
420 425 430

Lys Asn Lys Met Met Val Cys Gln Val Gly Gly Ile Glu Ala Leu Val  
435 440 445

Arg Thr Val Leu Arg Ala Gly Asp Arg Glu Asp Ile Thr Glu Pro Ala  
450 455 460

Ile Cys Ala Leu Arg His Leu Thr Ser Arg His Gln Glu Ala Glu Met  
465 470 475 480

Ala Gln Asn Ala Val Arg Leu His Tyr Gly Leu Pro Val Val Val Lys  
485 490 495

Leu Leu His Pro Pro Ser His Trp Pro Leu Ile Lys Ala Thr Val Gly  
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Leu Ile Arg Asn Leu Ala Leu Cys Pro Ala Asn His Ala Pro Leu Arg  
515 520 525

Glu Gln Gly Ala Ile Pro Arg Leu Val Gln Leu Leu Val Arg Ala His  
530 535 540

Gln Asp Thr Gln Arg Arg Thr Ser Met Gly Gly Thr Gln Gln Gln Phe  
545 550 555 560

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580 585 590

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595 600 605

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Lys Glu Ala Ala Glu Ala Ile Glu Ala Glu Gly Ala Thr Ala Pro Leu  
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660 665 670

Arg Leu Ser Val Glu Leu Thr Ser Ser Leu Phe Arg Thr Glu Pro Met  
675 680 685

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690 695 700

Glu Ala Leu Gly Tyr Arg Gln Asp Asp Pro Ser Tyr Arg Ser Phe His  
705 710 715 720

Ser Gly Gly Tyr Gly Gln Asp Ala Leu Gly Met Asp Pro Met Met Glu  
725 730 735

His Glu Met Gly Gly His His Pro Gly Ala Asp Tyr Pro Val Asp Gly  
740 745 750

Leu Pro Asp Leu Gly His Ala Gln Asp Leu Met Asp Gly Leu Pro Pro  
755 760 765

Gly Asp Ser Asn Gln Leu Ala Trp Phe Asp Thr Asp Leu  
770 775 780

&lt;210&gt; 9

## CHM-003.ST25

&lt;211&gt; 3971

&lt;212&gt; DNA

&lt;213&gt; House Mouse

&lt;400&gt; 9

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## CHM-003.ST25

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## CHM-003.ST25

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<210> 10  
 <211> 370  
 <212> PRT  
 <213> House Mouse

<400> 10

Met Gly Leu Trp Ala Leu Leu Pro Ser Trp Val Ser Thr Thr Leu Leu  
 1 5 10 15

Leu Ala Leu Thr Ala Leu Pro Ala Ala Leu Ala Ala Asn Ser Ser Gly  
 20 25 30

Arg Trp Trp Gly Ile Val Asn Ile Ala Ser Ser Thr Asn Leu Leu Thr  
 35 40 45

Asp Ser Lys Ser Leu Gln Leu Val Leu Glu Pro Ser Leu Gln Leu Leu  
 50 55 60

Ser Arg Lys Gln Arg Arg Leu Ile Arg Gln Asn Pro Gly Ile Leu His  
 65 70 75 80

Ser Val Ser Gly Gly Leu Gln Ser Ala Val Arg Glu Cys Lys Trp Gln  
 85 90 95

Phe Arg Asn Arg Arg Trp Asn Cys Pro Thr Ala Pro Gly Pro His Leu  
 100 105 110

Phe Gly Lys Ile Val Asn Arg Gly Cys Arg Glu Thr Ala Phe Ile Phe  
 115 120 125



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Ala Ile Thr Ser Ala Gly Val Thr His Ser Val Ala Arg Ser Cys Ser  
130 135 140

Glu Gly Ser Ile Glu Ser Cys Thr Cys Asp Tyr Arg Arg Arg Gly Pro  
145 150 155 160

Gly Gly Pro Asp Trp His Trp Gly Gly Cys Ser Asp Asn Ile Asp Phe  
165 170 175

Gly Arg Leu Phe Gly Arg Glu Phe Val Asp Ser Gly Glu Lys Gly Arg  
180 185 190

Asp Leu Arg Phe Leu Met Asn Leu His Asn Asn Glu Ala Gly Arg Thr  
195 200 205

Thr Val Phe Ser Glu Met Arg Gln Glu Cys Lys Cys His Gly Met Ser  
210 215 220

Gly Ser Cys Thr Val Arg Thr Cys Trp Met Arg Leu Pro Thr Leu Arg  
225 230 235 240

Ala Val Gly Asp Val Leu Arg Asp Arg Phe Asp Gly Ala Ser Arg Val  
245 250 255

Leu Tyr Gly Asn Arg Gly Ser Asn Arg Ala Ser Arg Ala Glu Leu Leu  
260 265 270

Arg Leu Glu Pro Glu Asp Pro Ala His Lys Pro Pro Ser Pro His Asp  
275 280 285

Leu Val Tyr Phe Glu Lys Ser Pro Asn Phe Cys Thr Tyr Ser Gly Arg  
290 295 300

Leu Gly Thr Ala Gly Thr Ala Gly Arg Ala Cys Asn Ser Ser Ser Pro  
305 310 315 320

Ala Leu Asp Gly Cys Glu Leu Leu Cys Cys Gly Arg Gly His Arg Thr  
325 330 335

Arg Thr Gln Arg Val Thr Glu Arg Cys Asn Cys Thr Phe His Trp Cys  
340 345 350

Cys His Val Ser Cys Arg Asn Cys Thr His Thr Arg Val Leu His Glu

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355

360

365

Cys Leu  
370

&lt;210&gt; 11

&lt;211&gt; 1669

&lt;212&gt; DNA

&lt;213&gt; House Mouse

&lt;400&gt; 11

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## CHM-003.ST25

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 tcaataaaga cattaaatc cacaaaaaa aaaaaaaaa aaaaaaaaa 1669

&lt;210&gt; 12

&lt;211&gt; 364

&lt;212&gt; PRT

&lt;213&gt; House Mouse

&lt;400&gt; 12

Met Leu Pro Pro Val Pro Ser Arg Leu Gly Leu Leu Leu Leu Leu  
 1 5 10 15

Cys Pro Ala His Val Asp Gly Leu Trp Trp Ala Val Gly Ser Pro Leu  
 20 25 30

Val Met Asp Pro Thr Ser Ile Cys Arg Lys Ala Arg Arg Leu Ala Gly  
 35 40 45

Arg Gln Ala Glu Leu Cys Gln Ala Glu Pro Glu Val Val Ala Glu Leu  
 50 55 60

Ala Arg Gly Ala Arg Leu Gly Val Arg Glu Cys Gln Phe Gln Phe Arg  
 65 70 75 80

Phe Arg Arg Trp Asn Cys Ser Ser His Ser Lys Ala Phe Gly Arg Val  
 85 90 95

Leu Gln Gln Asp Ile Arg Glu Thr Ala Phe Val Phe Ala Ile Thr Ala  
 100 105 110

Ala Gly Ala Ser His Ala Val Thr Gln Ala Cys Ser Met Gly Glu Leu  
 115 120 125

Leu Gln Cys Gly Cys Gln Ala Pro Arg Gly Arg Ala Pro Pro Arg Pro  
 130 135 140

Ser Gly Leu Leu Gly Thr Pro Gly Pro Pro Gly Pro Thr Gly Ser Pro  
 145 150 155 160

Asp Ala Ser Ala Ala Trp Glu Trp Gly Gly Cys Gly Asp Asp Val Asp

CHM-003.ST25

165            170            175

Phe Gly Asp Glu Lys Ser Arg Leu Phe Met Asp Ala Gln His Lys Arg  
 180            185            190

Gly Arg Gly Asp Ile Arg Ala Leu Val Gln Leu His Asn Asn Glu Ala  
 195            200            205

Gly Arg Leu Ala Val Arg Ser His Thr Arg Thr Glu Cys Lys Cys His  
 210            215            220

Gly Leu Ser Gly Ser Cys Ala Leu Arg Thr Cys Trp Gln Lys Leu Pro  
 225            230            235            240

Pro Phe Arg Glu Val Gly Ala Arg Leu Leu Glu Arg Phe His Gly Ala  
 245            250            255

Ser Arg Val Met Gly Thr Asn Asp Gly Lys Ala Leu Leu Pro Ala Val  
 260            265            270

Arg Thr Leu Lys Pro Pro Gly Arg Ala Asp Leu Leu Tyr Ala Ala Asp  
 275            280            285

Ser Pro Asp Phe Cys Ala Pro Asn Arg Arg Thr Gly Ser Pro Gly Thr  
 290            295            300

Arg Gly Arg Ala Cys Asn Ser Ser Ala Pro Asp Leu Ser Gly Cys Asp  
 305            310            315            320

Leu Leu Cys Cys Gly Arg Gly His Arg Gln Glu Ser Val Gln Leu Glu  
 325            330            335

Glu Asn Cys Leu Cys Arg Phe His Trp Cys Cys Val Val Gln Cys His  
 340            345            350

Arg Cys Arg Val Arg Lys Glu Leu Ser Leu Cys Leu  
 355            360

&lt;210&gt; 13

&lt;211&gt; 3154

&lt;212&gt; DNA

&lt;213&gt; House Mouse

&lt;400&gt; 13

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## CHM-003.ST25

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## CHM-003.ST25

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&lt;210&gt; 14

&lt;211&gt; 349

&lt;212&gt; PRT

&lt;213&gt; House Mouse

&lt;400&gt; 14

Met His Arg Asn Phe Arg Lys Trp Ile Phe Tyr Val Phe Leu Cys Phe  
 1 5 10 15

Gly Val Leu Tyr Val Lys Leu Gly Ala Leu Ser Ser Val Val Ala Leu  
 20 25 30

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Val Ala Asn Ile Ile Cys Asn Lys Ile Pro Gly Leu Ala Pro Arg Gln  
35 40 45

Arg Ala Ile Cys Gln Ser Arg Pro Asp Ala Ile Ile Val Ile Gly Glu  
50 55 60

Gly Ala Gln Met Gly Ile Asp Glu Cys Gln His Gln Phe Arg Phe Gly  
65 70 75 80

Arg Trp Asn Cys Ser Ala Leu Gly Glu Lys Thr Val Phe Gly Gln Glu  
85 90 95

Leu Arg Val Gly Ser Arg Glu Ala Ala Phe Thr Tyr Ala Ile Thr Ala  
100 105 110

Ala Gly Val Ala His Ala Val Thr Ala Ala Cys Ser Gln Gly Asn Leu  
115 120 125

Ser Asn Cys Gly Cys Asp Arg Glu Lys Gln Gly Tyr Tyr Asn Gln Ala  
130 135 140

Glu Gly Trp Lys Trp Gly Gly Cys Ser Ala Asp Val Arg Tyr Gly Ile  
145 150 155 160

Asp Phe Ser Arg Arg Phe Val Asp Ala Arg Glu Ile Lys Lys Asn Ala  
165 170 175

Arg Arg Leu Met Asn Leu His Asn Asn Glu Ala Gly Arg Lys Val Leu  
180 185 190

Glu Asp Arg Met Lys Leu Glu Cys Lys Cys His Gly Val Ser Gly Ser  
195 200 205

Cys Thr Thr Lys Thr Cys Trp Thr Thr Leu Pro Lys Phe Arg Glu Val  
210 215 220

Gly His Leu Leu Lys Glu Lys Tyr Asn Ala Ala Val Gln Val Glu Val  
225 230 235 240

Val Arg Ala Ser Arg Leu Arg Gln Pro Thr Phe Leu Arg Ile Lys Gln  
245 250 255

Leu Arg Ser Tyr Gln Lys Pro Met Glu Thr Asp Leu Val Tyr Ile Glu

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260

265

270

Lys Ser Pro Asn Tyr Cys Glu Glu Asp Ala Ala Thr Gly Ser Val Gly  
275 280 285

Thr Gln Gly Arg Leu Cys Asn Arg Thr Ser Pro Gly Ala Asp Gly Cys  
290 295 300

Asp Thr Met Cys Cys Gly Arg Gly Tyr Asn Thr His Gln Tyr Thr Lys  
305 310 315 320

Val Trp Gln Cys Asn Cys Lys Phe His Trp Cys Cys Phe Val Lys Cys  
325 330 335

Asn Thr Cys Ser Glu Arg Thr Glu Val Phe Thr Cys Lys  
340 345